CLAIMS

1. Process for carrying out and managing videoconferences among a plurality of users locations suitable to receive and transmit audio-video signals and located at whatever distance, using whatever communication protocol, characterised by the fact that it comprises the following steps:

- link-up a direction room (1) to a plurality of both remote and neighbour locations (2), where a signal of the audio video type (AV) is originated;
- conversion of the audiovisual signal (AV) from each location (2), before its transfer from the place where it was generated to that where the direction room is located (1), so as to make it suitable to the type of connection and transmission which are being utilised;
- Reconversion of the signal (AV) which has been received into the audio video format, before its arrival at the direction room (1);
- Selection of the signal or signals to use and send away to the attendants and the speaker respectively, by an input audio video matrix (MV1);
- Addition of the contributions and the necessary audio and/or video effects, as well as of titles, soundtracks, comments, images, graphs and so on, by a video mixer or a computer having similar functions;
- Selection of the processed audio video signals (AV) and sending thereof to the several remote locations (2), according to the role that the users who are there located play at that moment (i.e. attendants or speakers).

2. Process according to claim 1, characterised by

the fact that while the attendants to the conference receive the audio video signal from the speaker, the speaker receives a different audio video signal which has been selected at the direction room (1).

3. Process according to claim 2, characterised by the fact that the speaker receives an overview of the attendants (2), or of some of them, by the employment of a targeted or cyclical selection device (SR) that selects the desired signals from the signals that arrive from the several locations, to further forward them to the output audio-video matrix (MV2), for their subsequent delivery to the speaker; said signals (AV) being capable of being simultaneously combined.

4. Process according to ~~the preceding claims,~~ claim 1 characterised by the fact that the speaker is shown the graph that he is talking about to the attendants on his own screen, the attendants receiving said graph as a superimposition or within a section of the image of the speaker himself or vice-versa.

5. Process according to ~~the preceding claims,~~ claim 1 characterised by the fact that it provides for the audio signal (A) from the speaker to be sent to the interpretation room (I) wherein a simultaneous translation into the languages required by the attendants is carried out; the signal which is sent to each attendant being therefore composed of the video signal (V1, V2,..., Vn) selected for him, to which the

suitable audio signal (A1, A2,..., An) has been associated, *i.e.* the one that corresponds to the translation required by the user.

6. Process according to ~~the preceding claims,~~ claim 1 characterised by the fact that more than one user can receive the same audio video signal (AV).

7. Process according to ~~the preceding claims,~~ claim 1 characterised by the fact that it provides for the recording of the audio video signal for the purpose of archive or else, so well as it is actually seen by the attendants, that is enriched with the audiovisual contributions and the television effects that have been added, by a suitable videotape recorder (VD2) that receives the output signal of a video mixer (MIX) or computer with similar functions.

~~8.~~ Apparatus for carrying out and managing videoconferences among a plurality of users located at whatever distance and using whatever communication protocol, characterised by the fact that it comprises a plurality of remote and/or neighbour user-locations (2), of the interactive or multimedial type which are linked to a direction room (1) which exchanges a signal (AV) of the analog and/or digital audiovisual type with them.

9. Apparatus according to claim 8, characterised by the fact that said signal (AV) contains a series of information relative to the conference and the speaker or the speakers that are scheduled to talk, as well as

other auxiliary audiovisual information.

10. Apparatus according to ~~claims 8 and 9,~~ claim 9 characterised by the fact that said user-locations (2) comprise audiovisual input/output means; signal transmission between said locations and the direction room, and vice-versa, taking place regardless via (aggregate or not, analog and/or ISDN) telephone lines, tie lines, satellite transmission devices, data transmission networks (including Internet), and so on.

11. Apparatus according to ~~claims 8, 9 and 10,~~ claim 10 characterised by the fact that said remote locations (2) are equipped with analog/digital audiovisual signal conversion devices, said signal being then sent to the direction room (1) using suitable communication protocols according to the type of link which has been accomplished.

12. Apparatus according to ~~claims 8, 9, 10 and 11,~~ claim 11 characterised by the fact that the direction room (1) simultaneously receives the respective signals (AV) coming from all the users (2) linked-up to the videoconference, tranforms them into audiovisual signals by dint of said conversion devices and singly visualises them on a series of monitors; said signals (AV) are then channeled into an audio video matrix (MV1) that makes it possible to send just the signals coming from the speaker or speakers to the video mixer (MIX), in such a way that they are seen by all the

other attendants, with possible image fadings or other effects.

13. Apparatus according to ~~claims 8, 9, 10, 11 and 12,~~ claim 12 characterised by the fact that the signals (AV) selected by means of the audio video matrix (MV1) are forwarded to a video mixer (MIX), or a computer with similar functions, which is capable of interfacing with a number of appliances such as computers (PC), video tape recorders (VD1), cameras, titlers (T), audio equipment, and so on; said video mixer (MIX) making it possible to add to or superimpose onto the videoconference signal, that is to that from the speaker, a series of audiovisual contributions such as titles, subtitles, musical themes or soundtracks, audio video fadings, slides and/or graphs, visualising them full screen or on a portion thereof.

14. Apparatus according to ~~claims from 8 to 13,~~ claim 13 characterised by the fact that it provides for the visualisation of the name of the speaker that is talking at a certain moment, for the carrying out of image superimpositions, for the use of special effects and/or whatever other type of audiovisual contribution that makes the conference more versatile and adaptable to the specific need of a certain moment; said apparatus further providing for the superimposition, the placing side by side or the creation of effects between the image of the speaker and of films backing up his talk, or of graphs that he himself is making or

changing at that very moment, and so on.

15. Apparatus according to ~~claims from 8 to 14,~~ claim 14 characterised by the fact that the audio video signal (AV) as it is processed by the video mixer (MIX), or by a computer with similar functions, is sent to a second audio video matrix (MV2), or an analoguos audiovisual signal sorting-out device, that provides for the signal to be forwarded to each single user (2), regardless of whether they be remote or local.

16. Apparatus according to ~~claims from 8 to 15,~~ claim 15 characterised by the fact that the two input and output commutation devices of the direction room (MV1, MV2) ensure a total compatibility between different videocommunication systems, by said plurality of conversion devices, so as to provide for the transmission between equipments that belong to technological realitites that have so far been incompatible.

17. Apparatus according to ~~claims from 8 to 16,~~ claim 16 characterised by the fact that the audio signal (A) is captured before it reaches output audiovisual matrix (MV2), so as to make it possible to carry out a simultaneous translation by one or more interpreters into the language or languages of one or more users (2) that may require it.

18. Apparatus according to ~~claims from 8 to 17,~~ claim 17 characterised by the fact that the audio signal (A)

that is sent to an interpretation room (I) for the translation, is subsequently associated to the video signal (V) exiting the second audio video matrix (MV2) in real time, in such a way that the translation or the translations are respectively listened to just by all the users that make an explicit request for them.

19. Apparatus according to ~~claims from 8 to 18,~~ claim 18 characterised by the fact that the audio video signal (AV) as elaborated by the video mixer (MIX), or by a computer with similar functions, is forwarded to a videotape recorder (VD2) that records the videoconference.

20. Apparatus according to ~~claims from 8 to 19,~~ claim 19 characterised by the fact that the direction (1) can take part in whatever moment, by replacing the audio video signal (AV) which is sent to one or more attendants (2), regardless of whether they be remote or local, with an audio video signal of its own (AVR), accomplishing an "intercom" type communication while the users who are not interested keep following the vieoconference without any disruption or interference.

21. Apparatus according to ~~claims from 8 to 20,~~ claim 20 characterised by the fact that the signal (AV) which is elaborated by the direction room (1), is of the audio-video type: therefore the incoming signals from it that are not in the audio video format must be transformed before their utilisation and possibly retransformed

into an analog or digital form ~~at the~~ moment of their forwarding to remote attendants; said input and output conversions at the direction room depend on the systems used and on the analog or digital features of the link-up, with each single remote user, which be accomplished by the means that the user believes to be most suitable: analog ISDN or aggregate ISDN telephone lines, tie-lines, satellite transmissions, computer networks (e.g. Internet), and so on.

22. Apparatus according to ~~claims from 8 to 21,~~ claim 21 characterised by the fact that all the attendants to the videoconference receive the audiovisual signal selected by the direction, of the person that is talking, while on the spekaer's screen there is found to be visualised the attendant to whom he is answering directly, or with whom he intends to discuss, or, in a so called cyclical fashion, all the attendants to the conference (one by one or in groups); for this purpose, the doubling of all the incoming signals (AV) being provided.

23. Apparatus according to claim 22, characterised by the fact that said selection of the signal sent to the speaker is obtained by dint of a video matrix and a cyclical visualisation device, with the possibility of simultaneously combining more than one audiovisual sources, controlled by a timer-programmer or by a computer; the resulting signal being only sent to the speaker and/or some particular users, by the output

vodeo matrix (MV2), if the direction believes it necessary.

24. Apparatus according to ~~claims from 8 to 23,~~ claim 23 characterised by the fact that, according to schedule or else, the director can select the speaker who is scheduled to talk, who is bound to be visualised to all the other attendants to the conference and or spectators.

25. Apparatus according to ~~claims from 8 yo 24,~~ claim 24 characterised by the fact that keeping the audio channel active of all or part of the attendants to the conference (2), this makes it possible to automatically visualise the participants that take part temporarily and briefly, by the employment of windows or spots.

26. Apparatus according to ~~claims 8 to 25,~~ claim 25 characterised by the fact that thanks to suitable (aggregate or tie-line) link-ups between the direction room and an Internet Provider, it is possible to transmit the audiovisual signal (AV) of the videoconference, that comes from the outgoing audio video matrix (MV2), to any Internet user.

27. Apparatus according to claim 26, characterised by the fact that by a suitable discussion group, any single user can ask questions, show examples and actively take psrt in the debate; a chairperson being capable of visualising on his own monitor all the

communications between the final users or spectators by a computer, and of ascertaining whether to turn them to one of the speakers that can answer using the channels and modalities of the videoconference which have already been described.

28. Apparatus according to claim 27, characterised by the fact that if the chairperson on the other hand believes it suitable to let an Internet user (UI) take part in the debate, the direction room (1) is capable of carrying out an unexpected but viable telephone link-up (AV-UI) turning the Internet user into an "actor" from being a "spectator", and offering him the possibility of getting to take part in the videoconference just in the same fashion as the other attendants who are already connected (with the proviso that the latecomer is sufficiently equipped for taking part in the videoconference with the modalities and features which were previuosly described).

29. Apparatus according to ~~claims 8 to 28,~~ claim 28, characterised by the fact that in case of an Internet connection, besides by normal switch or ISDN telephone lines, the link-up between remote user and provider can take place thanks to a mixed signal management system where the requests made by the user are transmitted to the provider by telephone, while the audio video signal relative to the videoconference or the data which have been requested can be received via satellite, drastically augmenting the quality and the reception

speed, regardless of the traffic on the network and of the amount of users who are connected at that moment; it being further possible to carry out the transmission and the data file exchange whatever type they are, in a manner which is absolutely compatible with whatever type of computer or computer system.

30. Apparatus according to ~~the preceding claims~~ claim 8, characterised by the fact that said remote or neighbour locations (2) can also comprise a camera and a microphone which are apt to forward the audiovisual signal that comes from an event, a parade, sports events or else, to the direction room (1), which is going to use it in the most suitable way.

31. Apparatus according to ~~the preceding claims~~ claim 8, characterised by the fact that the connections between the several locations, whether they be remote or local, and the direction room, are managed by dint of the normal known link-up procedures that can be by means of a telephone line carrier , by direct phone calls, by Internet network, via satellite, tie-lines, and so on.